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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/844,340	04/27/2001	Kevin Gary Tapperson	AUS920010051US1	9357
7590	08/16/2004		EXAMINER MEUCCI, MICHAEL D	
Duke W. Yee Carstens, Yee & Cahoon, LLP P.O. Box 802334 Dallas, TX 75380			ART UNIT 2142	PAPER NUMBER

DATE MAILED: 08/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/844,340

Applicant(s)

TAPPERSON, KEVIN GARY

Examiner

Michael D Meucci

Art Unit

2142

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 April 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 08/13/2001.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because it does not comply the 150 word maximum length. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 1-5, 7-14, 16-17, 20-24, 26-32, 34-35, and 38-39 rejected under 35 U.S.C. 102(b) as being anticipated by Endicott et al. (U.S. 6,047,295) hereinafter referred to as Endicott.

- a. As per claims 1, 20, and 38, Endicott teaches: establishing a connection to a server (lines 33-37 of column 5); starting a timer responsive to conclusion of a communication process using the connection (line 67 of column 7 through line 9 of column 8); maintaining a normal reference to a connection object for the connection (lines 31-34 of column 1); maintaining a weak reference to the connection object responsive to conclusion of a predetermined time period (lines 30-36 of column 2); and periodically destroying connection objects maintained by weak references (lines 24-33 of column 3).

- b. As per claims 2 and 21, Endicott teaches: determining whether a normal reference to the connection object exists (lines 43-52 of column 7); and reusing the connection if the normal reference exists (lines 35-47 of column 10).
- c. As per claims 3 and 22, Endicott teaches: restarting the timer (lines 53-59 of column 7).
- d. As per claims 4, and 23, Endicott teaches: determining whether a weak reference to the connection exists (lines 43-47 of column 7); determining whether the connection object has been destroyed if the weak reference exists (lines 47-52 of column 7); reusing the connection if the connection object has not been destroyed (line 48 of column 10 through line 2 of column 11).
- e. As per claims 5 and 24, Endicott teaches: restarting the timer (lines 53-59 of column 7).
- f. As per claims 7 and 26, Endicott teaches: sending notification to the server that the connection object is unreferenced when a weak reference to the connection object is maintained (line 66 of column 6 through line 15 of column 7).
- g. As per claim 8, Endicott teaches: destroying the connection object in response to garbage collection by the server (lines 46-67 of column 3).
- h. As per claims 9-10 and 27-28, Endicott teaches: the client is a client Java Virtual Machine; the server is a server Java Virtual Machine (lines 36-42 and lines 54-62 of column 6).

i. As per claims 11-12 and 29-30, Endicott teaches: the client Java Virtual Machine and the server Java Virtual Machine reside on the same host machine (lines 30-45 of column 5, lines 36-42 and lines 54-62 of column 6).

j. As per claims 13, 31, and 39 Endicott teaches: identifying a weak reference to a connection object for a connection to a server (lines 43-47 of column 7); determining whether the connection object has been destroyed (lines 47-52 of column 7); reusing the connection if the connection object has not been destroyed (line 48 of column 10 through line 2 of column 11).

k. As per claims 14 and 32, Endicott teaches: destroying the connection object responsive to garbage collection by the server (lines 46-67 of column 3).

l. As per claims 16 and 34, Endicott teaches: the connection object is a Java object (lines 36-42 of column 6).

m. As per claims 17 and 35, Endicott teaches: the Java object is a remote method invocation object (lines 56-59 of column 5).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6, 15, 25, and 33 rejected under 35 U.S.C. 103(a) as being unpatentable over Endicott as applied to claims 4 and 23 respectively above.

Official Notice taken of establishing a new connection if the connection object has been destroyed. Establishing a new connection if the connection object has been destroyed is very well known in the art at the time of the applicant's invention. It would have been obvious for one of ordinary skill in the art at the time of the applicant's invention to establish a new connection if the connection object has been destroyed in the system as taught by Endicott.

6. Claims 18-19, 36-37, and 40 rejected under 35 U.S.C. 103(a) as being unpatentable over Endicott in view of Nilsen et al. (U.S. 5,692,185) hereinafter referred to as Nilsen.

a. As per claims 18, 36, and 40, Endicott teaches: starting a timer responsive to conclusion of a communication process using the connection (line 67 of column 7 through line 9 of column 8); and removing the reference to the connection object from the hash map responsive to conclusion of a predetermined time period measure by the timer (line 66 of column 2 through line 9 of column 3; and lines 56-59 of column 2).

Endicott fails to teach: adding a reference to a connection object for a connection to a weak hash map and a hash map; and removing the reference to the connection object from the hash map responsive to conclusion of a predetermined time period measured by the timer. However, Nilsen discloses: "There are many important applications that benefit from garbage collection support for weak pointers. Miller describes, for example, a hashing function built into MultiScheme that associates a unique integer with each object (see reference given above). The hashing libraries retain a weak pointer to each object that has requested a hash number so that

subsequent requests for the hash identity of the same object map to the same integer number,” (lines 15-22 of column 44).

Official notice taken of using two hash maps instead of one. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to combine the two hash maps having similar fields into one table with a single additional column for storing the state (hash or weak-hash) as an integer. The use of one hash map with an additional column for an integer/state value is advantageous over using two hash maps in that it saves memory by not having to store the object name in multiple hash maps.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to add a reference to a connection object for a connection to a weak hash map and a hash map. “If garbage collection finds that the only pointers to certain objects originate in the hashing system, then the object is reclaimed, the hashing system eventually discovers that the weak pointer to the object has been overwritten with zero, and the integer previously associated with that object is recycled,” (lines 22-27 of column 44 in Nilsen).

It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to add a reference to a connection object for a connection to a weak hash map and a hash map in the system as taught by Endicott.

b. As per claims 19 and 37, Endicott teaches: determining whether the connection object has been destroyed (lines 47-52 of column 7); removing the reference

to the connection object from the weak hash map if the connection object has been destroyed (lines 24-33 of column 3; and lines 56-59 of column 2).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Craig (U.S. 6,108,687) discloses system and method for providing a synchronized display to a plurality of computers over a global computer network.

Jones et al. (U.S. 6,134,603) discloses a method and system for deterministic hashes to identify remote methods.

Foote et al. (U.S. 6,167,535) discloses an object oriented heap analysis techniques for discovering memory leaks and other run-time information.

Shilts et al. (U.S. 6,237,060 B1) discloses cache management techniques.

Loen (U.S. 6,438,560 B1) discloses the reuse of immutable objects during object creation and hash tables.

Hudson et al. (U.S. 6,671,707 B1) discloses a method for practical concurrent copying garbage collection offering minimal thread block times.

Santosuosso et al. (U.S. 6,701,540 B1) discloses preventing garbage collection of objects in object-oriented computer programming languages.

Price et al. ("Garbage Collector Memory Accounting in Language-Based Systems") discloses shared memory garbage collection and OS-based resource accounting.


8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Meucci at (703) 305-1382. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Harvey, can be reached at (703) 305-9705. The fax phone number for this Group is (703) 308-5358.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [michael.meucci@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to Group receptionist whose telephone number is (703) 305-3900.


JACK B. HARVEY
SUPERVISORY PATENT EXAMINER